

COMMENTS ON THE LIFE HISTORY OF THE
ELEPHANT HAWK-MOTH, *DEILEPHILA ELPENOR* L.
(LEP: SPHINGIDAE)

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The earlier entomological textbooks tend to specify a predilection by *D. elpenor* for wet habitats, and the larval foodplants listed support this. Barrett (1892-1900) gives *Epilobium hirsutum* as the main foodplant, Tutt (1902) writes "the sides of ditches are the favourite haunts of *C. elpenor* — on *Galium palustre*, etc." and "the larvae of *C. elpenor* appear to prefer *G. palustre* before all other foodplants," Newman (1874) states "feeds on the large willow herb, which is so common on the sides of ditches, also on ladies' bedstraw, and sometimes in gardens on fuchsias," and South (1906) writes "chiefly on *E. hirsutum* and on bedstraws especially the kind (*G. palustre*), growing by the side of brooks and streams." For France and Belgium Lhomme (1923-1935) lists only *E. palustre* and *E. hirsutum* of the willowherbs, and the drawings in Buckler (1891-1899) portray the larvae upon *G. palustre* and *E. hirsutum*.

By contrast I became acquainted with *elpenor* larvae in the 1930s on the gravels of Dartford Heath and the chalk around Greenhithe, dry habitats in the driest part of Britain, and I found them only upon the rose-bay willowherb (*Epilobium angustifolium*); also during several summers about 1950 Mr. C. Rivers and I frequently searched the bedstraws on Dartford Heath, finding larvae of *D. porcellus* L. and *Macroglossum stellatarum* L. in plenty, but never *elpenor*.

In the early 1970s *elpenor* was a much commoner moth at my garden m.v. light than expected in view of the lack of *E. angustifolium* in the immediate vicinity, but in 1972 the problem was solved when I inadvertently discovered by touch a caterpillar at the base of a plant of *E. parviflorum* whilst weeding, others being found subsequently. None of those I found was readily observed, being located near the base of the plant and well concealed by vegetation. Now *E. parviflorum* had been noted as a larval foodplant of *elpenor* by Tutt (1902) yet rarely mentioned subsequently, and at the time of publication Chalmers-Hunt (1968) had no record for this foodplant, although K. and E. Evans (1973) state that at Mitcham Common and Croydon *elpenor* larvae have been noted on this plant more commonly than upon *E. angustifolium*. More recently, on September 4th 1981 and subsequently I have found the larva on the most recent invader of my garden, the American *E. adenocaulon*, and for this plant I can find no previous reference regarding *elpenor*.

A phenomenon well publicised at the time was the abundance of *elpenor* larvae on the derelict bomb sites in London where they

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were dependent upon the rapid colonization of these sites by willow-herb, especially the rose-bay. Although usually on London Clay the accumulation of rubble made them essentially dry habitats in Summer.

The rose-bay and some of the smaller willowherbs have undergone a population explosion in recent decades, although perhaps surprisingly for Kent, Hanbury and Marshall (1899) list *E. angustifolium* as occurring in all districts and frequent in most of them, and *E. parviflorum* and *E. montanus* as very common. However, elsewhere a different picture emerges. Salisbury (1961) states that the rose-bay was in general regarded as an uncommon plant in Britain until the present century, and in particular it was a scarce species in Hertfordshire half a century ago, although now it is an abundant one, and despite it being a common wild flower in London to-day it was infrequent at the beginning of the century. The American alien, *E. adenocaulon*, too has shown a remarkable increase since 1930, and Walters in Perring (1974) remarks that in Cambridgeshire "as an undergraduate I knew only *Epilobium roseum* as a street weed when now the American alien *E. adenocaulon* is by far the commonest willowherb."

It is not easy to obtain an accurate assessment of the larval foodplant preferences of *elpenor* because it is much more readily found on some than others, and especially because we give more attention to some and tend to neglect others of the extensive list of foodplants recorded which cover about a dozen botanical families. Today the insect is known to be associated with a wide range of habitats, apparently wider than formerly, to include stream sides and marshes, heath and woodland, gardens, urban and rural wasteland, sea-cliffs, road margins and railway embankments. In N. W. Kent I have found the larvae on *E. angustifolium* and *E. parviflorum*, mainly the former, and only occasionally on other species of willow-herb. I have frequently searched *E. hirsutum*, but only once found a caterpillar, and the bedstraws of Dartford Heath without success, but unfortunately have neglected to pay attention to such plants as enchanter's nightshade and evening primrose.

Chalmers-Hunt (1981) refers to the larvae feeding "commonly on enchanter's nightshade (*C. lutetiana*) in the City of Canterbury" and "often on *I. glandulifera* in gardens at Tunbridge Wells" indicating distinct local preferences within the county, but it is not clear if these were but transient or of a more permanent nature. Similar local preferences have been noted in entomological journals, thus for Staffordshire Clarke (*Entomologist* 80:68) emphasizes a decided preference for *E. hirsutum*, *E. parviflorum* and *G. palustre*, with very few on *E. angustifolium* despite intensive search, and all the larvae being in the vicinity of streams.

Johnson (*Ent. Rec.* 65:72) writing of Derbyshire relates that he found 72 larvae on *E. angustifolium* on low-lying wasteland, but

none in the woods and on the moors, also suggesting a habitat preference. For Hampshire Goater (*Ent. Rec.* 67:251) states that on roadsides near Chandlers Ford the "small willowherb" is preferred to *E. angustifolium*, a similar trend to that noted earlier for N. E. Surrey.

D. elpenor would appear to have the unusual distinction among our native moths of having extended its range considerably, especially northwards, and to have become commoner generally, over the past fifty years. A major factor of these trends seems to have been the increase and spread of one of its favourite foodplants, *E. angustifolium*, and some of the smaller species of *Epilobium*. Hulme (*Ent. Rec.* 69:237) states that for Derbyshire *elpenor* was rare before 1930, but was much commoner in the 1950s. For Berwickshire (*Ent. Rec.* 66:286) Long reveals that Bolam had only five records for over a century, whereas now the moth occurs throughout the county. The recent spread of *elpenor* into the Highlands of Scotland and Hebrides has been the subject of notes in this journal, e.g. common in Glengarry, W. Inverness-shire in 1977 by Howard (*Ent. Rec.* 90:259) and the first record for Canna in 1977 by Campbell (*Ent. Rec.* 89:255).

The time of appearance of the moth is given in the standard textbooks, i.e. Newman (1874), Barrett (1892-1900), South (1907), Newman and Leeds (1913) and Heath (1979), as June, with mention in three of the works of an occasional second brood. Now this is curious as June could not be described as a reasonable description of the moth's time of appearance to-day. During the past sixteen years *elpenor* has been noted at my garden m.v. light on 140 occasions, usually singly — 23% in June, 69% in July, 8% in August and none in May. Analysis of the figures into ten (eleven) day periods produces the following — figures denoting the number of visits, and in brackets the number of nights with light operating:

June 1-10: 0 (72)	June 11-20: 10 (69)	June 21-30: 22 (74)
July 1-10: 35 (97)	July 11-20: 33 (85)	July 21-31: 28 (86)
Aug. 1-10: 10 (56)	Aug. 11-20: 0 (70)	Aug. 21-31: 0 (71)

These figures indicate that here *elpenor* is essentially a July moth, but appearing from mid-June until early August. The figures for early August, and to a lesser extent early June, may be significantly depressed because of the light being operated on fewer favourable nights due to my more frequent absence at these periods. However, although these records indicate that *elpenor* has not been noted before June 12th, I possess specimens dated May 27th 1964 and June 8th 1965 from Dartford Heath, little over a half mile away, and I have encountered the moth in late May elsewhere in Kent. Thus in N. W. Kent *elpenor* appears to fly from late May until about August 10th in one extended brood, and especially in

late June and throughout July, but the period will vary according to the weather conditions and the micro-climate of its habitat.

When *elpenor* is bred the moth very occasionally emerges the same year, and in nature similar emergences give rise to the occasional specimen seen in September: the only examples of which I am aware are as follows:—

(a) de Worms (*Ent. Rec.* 73:241), Sept. 13th 1961 at Woking, "I was surprized to find an Elephant Hawk in my trap here, most probably a second brood specimen as the last one I had recorded from here was on 12th July."

(b) ffennell (*Ent. Rec.* 87:277) at Winchester Sept. 22nd 1975, "it was a surprise to find a specimen of this species in my trap this morning."

(c) Sept. 10th 1980 at Dartford, seen by myself. The moth was a perfect specimen at the base of a street light.

(d) Lipscombe (*Ent. Rec.* 79:25) records finding a caterpillar beside a patch of *E. roseum* at Warminster, Oct. 24th 1966, noting this "as an extraordinarily late date for the larva."

Chalmers-Hunt (1968) lists three Kent records for the first half of August as illustration of a partial second brood; however these specimens occur within the normal span of the main brood.

Duddington and Johnson (1983) states "the imago can be found over a long period with fresh specimens emerging from June into the Autumn," a statement hardly substantiated by the revelation of three records for late June. Records of this insect for Autumn, or even any time from mid-August, would have been most useful and interesting especially from a county as far north as Lincolnshire, but without evidence the statement must be treated with scepticism.

There are numerous references to the feeding habits of the imago, especially at honeysuckle (*Lonicera periclymenum*); in N. W. Kent I have most frequently found it imbibing at the flowers of white and bladder campion (*Silene alba* and *S. vulgaris*) and less frequently at those of red valerian (*Centranthus ruber*).

Despite this insect having become commoner, at times the larvae have been found to be heavily parasitized, e.g. Owen (*Entomologist* 84:268) cites 70% of larvae on bomb sites in London being host to Diptera and Hymenoptera, including *Amblyjoppa laminatoria* L. By contrast of the many larvae I have collected around Dartford over the years all have produced moths.

Seven species of hawk-moth have appeared at my garden m.v. light since 1969; their relative frequency has been as follows:—*Laothöë populi* L., 250; *C. elpenor* L., 140; *Smerinthus ocellata* L., 56; *Mimas tiliae* L., 39; *Sphinx ligustri* L., 11; *C. porcellus* L., 4; *Hyloicus pinastri* L., 1. The low incidence of *C. porcellus*, common less than a mile away on Dartford Heath, well reflects the greater restriction of habitat and larval foodplant of this species.

In conclusion, despite *elpenor* being a common and wide-spread insect, readily found as larva or imago, there is still much to be discovered of its natural history, especially regarding its time of appearance, its partial second brood, local larval foodplant preferences and its parasites, while any continued spread northwards will doubtless be reported.

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FURTHER RECORDS OF APOROPHYLA NIGRA HAW.: BLACK RUSTIC. — For some time, this moth has been extending its range into Kent, and elsewhere (Heath and Emmet, *The Moths and Butterflies of Great Britain and Ireland*, Vol. 10). In 1984, I saw the species for the first time at East Malling when a single moth came to m.v. on 16th and 25th September, followed by further solitary specimens on 15th and 17th October. About five miles south of here, at West Farleigh, I found another *nigra* at rest on a pole in a hop garden on 1st October.

Heath & Emmet (*op. cit.*) also give *nigra* as being rather rare in the Midlands, so I was pleased to record more specimens, again for the first time, at Beoley, Worcestershire, where four moths came to m.v. in my parent's garden on 9th October 1984. — D. A. CHAMBERS, 15 Briar Close, Larkfield, Maidstone, Kent.